

SX Microcontroller Selection Guide

Product	Program Memory EE-Flash		Data SRAM Bytes	Max Speed (MHz)	Instr Cycle Time (nsec)	Interrupts			I/O Pins	Brown Out Detect	Analog Comp- arators	Timers			Other Features	Operating Temp Range (°C)	Operating Voltage Range (V)	Package	Availability	
	Bytes	Words				Type		Response Int/Ext (nsec)				8-bit	16-bit	WDT					Samp	Prod
						Int	Ext													
SX18/20/28 Standard Devices																				
SX18AC/DP	3072	2048x12	136	50	20	1	8	60/100	12	2.2/2.6/4.2V	1	1	0	1	30mA source/sink per I/O, Internal RC Oscillator, Virtual Peripheral™ platform	0° to 70°	2.5V - 5.5V	SDIP-18	Now	Now
SX18AC/SO	3072	2048x12	136	50	20	1	8	60/100	12	2.2/2.6/4.2V	1	1	0	1		0° to 70°	2.5V - 5.5V	SOIC-18	Now	Now
SX20AC/SS	3072	2048x12	136	50	20	1	8	60/100	12	2.2/2.6/4.2V	1	1	0	1		0° to 70°	2.5V - 5.5V	SSOP-20	Now	Now
SX28AC/DP	3072	2048x12	136	50	20	1	8	60/100	20	2.2/2.6/4.2V	1	1	0	1		0° to 70°	2.5V - 5.5V	SDIP-28	Now	Now
SX28AC/SO	3072	2048x12	136	50	20	1	8	60/100	20	2.2/2.6/4.2V	1	1	0	1		0° to 70°	2.5V - 5.5V	SOIC-28	Now	Now
SX28AC/SS	3072	2048x12	136	50	20	1	8	60/100	20	2.2/2.6/4.2V	1	1	0	1		0° to 70°	2.5V - 5.5V	SSOP-28	Now	Now
SX18/20/28 Industrial Temp Devices																				
SX18AC-I/DP	3072	2048x12	136	50	20	1	8	60/100	12	2.2/2.6/4.2V	1	1	0	1	30mA source/sink per I/O, Internal RC Oscillator, Virtual Peripheral™ platform	-40° to +85°	2.5V - 5.5V	SDIP-18	Now	Now
SX18AC-I/SO	3072	2048x12	136	50	20	1	8	60/100	12	2.2/2.6/4.2V	1	1	0	1		-40° to +85°	2.5V - 5.5V	SOIC-18	Now	Now
SX20AC-I/SS	3072	2048x12	136	50	20	1	8	60/100	12	2.2/2.6/4.2V	1	1	0	1		-40° to +85°	2.5V - 5.5V	SSOP-20	Now	Now
SX28AC-I/DP	3072	2048x12	136	50	20	1	8	60/100	20	2.2/2.6/4.2V	1	1	0	1		-40° to +85°	2.5V - 5.5V	SDIP-28	Now	Now
SX28AC-I/SO	3072	2048x12	136	50	20	1	8	60/100	20	2.2/2.6/4.2V	1	1	0	1		-40° to +85°	2.5V - 5.5V	SOIC-28	Now	Now
SX28AC-I/SS	3072	2048x12	136	50	20	1	8	60/100	20	2.2/2.6/4.2V	1	1	0	1		-40° to +85°	2.5V - 5.5V	SSOP-28	Now	Now
SX18/20/28 Extended Speed Devices																				
SX18AC75/DP	3072	2048x12	136	75	13.33	1	8	39.9/66.5	12	4.2V	1	1	0	1	30mA source/sink per I/O, Internal RC Oscillator, Virtual Peripheral™ platform	0° to 70°	4.5V - 5.5V	SDIP-18	Now	99Q4
SX18AC75/SO	3072	2048x12	136	75	13.33	1	8	39.9/66.5	12	4.2V	1	1	0	1		0° to 70°	4.5V - 5.5V	SOIC-18	Now	99Q4
SX20AC75/SS	3072	2048x12	136	75	13.33	1	8	39.9/66.5	12	4.2V	1	1	0	1		0° to 70°	4.5V - 5.5V	SSOP-20	Now	99Q4
SX28AC75/DP	3072	2048x12	136	75	13.33	1	8	39.9/66.5	20	4.2V	1	1	0	1		0° to 70°	4.5V - 5.5V	SDIP-28	Now	99Q4
SX28AC75/SO	3072	2048x12	136	75	13.33	1	8	39.9/66.5	20	4.2V	1	1	0	1		0° to 70°	4.5V - 5.5V	SOIC-28	Now	99Q4
SX28AC75/SS	3072	2048x12	136	75	13.33	1	8	39.9/66.5	20	4.2V	1	1	0	1		0° to 70°	4.5V - 5.5V	SSOP-28	Now	99Q4
SX48/52BD Standard Devices																				
SX48BD/TQ	6144	4096x12	262	50	20	3	8	60/100	36	4.2V	1	1	2	1	30mA source/sink per I/O, 2 Capture/Compare/PWM, Internal RC Oscillator, Virtual Peripheral™ platform	0° to 70°	2.5V - 5.5V	TQFP-48	Now	99Q4
SX52BD/PQ	6144	4096x12	262	50	20	3	8	60/100	40	4.2V	1	1	2	1		0° to 70°	2.5V - 5.5V	PQFP-52	Now	99Q4
SX48BD/TQ	6144	4096x12	262	100	10	3	8	30/50	36	4.2V	1	1	2	1		0° to 70°	4.5V - 5.5V	TQFP-48	99Q4	00Q1
SX52BD/PQ	6144	4096x12	262	100	10	3	8	30/50	40	4.2V	1	1	2	1		0° to 70°	4.5V - 5.5V	PQFP-52	99Q4	00Q1



SX Features/Applications Matrix

Market Segment		Applications	Applications Requirements	SX Solution
Telecom	Embedded Modems	BELL 202 W/ DTMF ENCODER <ul style="list-style-type: none"> • Remote Data Gathering • POS Systems • Security Systems • Vending Machines • ATMs 	<ul style="list-style-type: none"> • 1200 Baud FSK Data Transmission • 1200 Hz and 2200 Hz Carrier Frequency • DTMF Encoding • Ring Detect • Timing Reference 	<ul style="list-style-type: none"> • 1200bps FSK I/O • DTMF Generation • 2400-11.5Kbps UART • In-System Programming • 8-bit hardware timer with 8-bit prescaler • 16-bit software timer
		DTMF ENCODER/DECODER <ul style="list-style-type: none"> • Least Cost Routers • Auto Dialer • PBX • Analog Line Testers • Pay Phones • Specialty Phones 	<ul style="list-style-type: none"> • DTMF Encoding/Decoding • I2C/UART Interface • Call Progress Detection/Generation 	<ul style="list-style-type: none"> • DTMF Detection/Generation • 2400-11.5Kbps UART • I2C • Call Progress function • In-System Programming • 8-bit hardware timer with 8-bit prescaler • 16-bit software timer
		BELL 202 W/ DTMF ENCODER/DECODER AND CALLER ID <ul style="list-style-type: none"> • Digital Answering Machine • Smart Phones • Caller ID • Least Cost Routers 	<ul style="list-style-type: none"> • DTMF Encoding/Decoding • Caller ID function • I2C/UART interface • FSK decoder for Caller ID • Call Progress Detection • Voice storage • Answering machine functions • PWM generation • Display drive 	<ul style="list-style-type: none"> • 1200bps FSK Encoding/Decoding • DTMF Encoding/Decoding • 2400-11.5Kbps UART • In-System Programming • 8-bit hardware timer with 8-bit prescaler • 16-bit software timer • Caller ID Function • I2C/UART Interface • LED/LCD direct drive • Digital answering machine control functions
	Other Telephony	<ul style="list-style-type: none"> • PCS Repeaters • Wireless Communications • Pagers • Telephony on TV • Remote Control of HVAC • Set Top Box Modem • Wave Division Mux/Fiber Optics 	<ul style="list-style-type: none"> • DTMF Encoding/Decoding • Caller ID function • I2C/UART interface • FSK decoder for Caller ID • Voice storage • PWM generation • Display drive 	<ul style="list-style-type: none"> • 1200bps FSK Encoding/Decoding • DTMF Encoding/Decoding • Call Progress function • 2400-11.5Kbps UART • In-System Programming • 8-bit hardware timer with 8-bit prescaler • 16-bit software timer • I2C/UART Interface • LED/LCD direct drive
Video		<ul style="list-style-type: none"> • Set Top Box on-Screen Overlay • Video Games • Video Test Equipment • Video on Demand 	<ul style="list-style-type: none"> • Character generation • Real-Time data capture and processing • Smooth character generation 	<ul style="list-style-type: none"> • Synchronous I/O operation • Deterministic program execution flow • Data capture at video clock speed • Program execution at video clock speed • Internal execution freq. same as video clock freq.
		<ul style="list-style-type: none"> • Digital Camera for Security Systems 	<ul style="list-style-type: none"> • Real-Time video data capture • High speed video data processing • Video data synchronization • Automatic White Balance function 	<ul style="list-style-type: none"> • Synchronous I/O operation • Deterministic program execution flow • Data capture at video clock speed • Program execution at video clock speed • Internal execution freq. same as video clock freq.
DSP/FPGA/ PLD/ASIC Replacement		<ul style="list-style-type: none"> • Speaker Phone Systems • Closed Loop Servo • Motor Control • Interactive Toys • Sound Generation • Protocol Converters • Voice Note • Magnetic-Strip Readers • Barcode/Image Scanners • PDAs • Digital Audio • Virtual Reality • Voice/Speech Synthesis • Voice Modulation/Demodulation/Recognition 	<ul style="list-style-type: none"> • Low cost digital filtering • Smooth waveform generation • PWM generation • PLA function • Multiple state machine implementation • Communications protocols such as: "CAN, IrDA, UDP/PPP, TCIP" 	<ul style="list-style-type: none"> • DSP-Like capabilities • Up to 100 MIPS performance • Predictable program execution • Digital filter within the bandwidth of Audio Signal Processing